SEQUENCE LISTING

<110> The Corporation of the Trustees of the Order of the Sisters of Mercy in Queensland

<120> Therapeutic and Diagnostic Agents

<130> 12373860/EJH

<150> AU 2002952993

<151> 2002-11-29

<160> 28

<170> PatentIn version 3.1

<210> 1

<211> 1151

<212> DNA

<213> Homo sapiens

<400> 1

ctctaaaggc cactagcacc catcccagag ctgtcagcac cggcctcagc ccaggcggct 60

ctctccctga gcttcctgta gccctgaccc tctccagcct cagacctgag acagggctgg 120

acaaggaagc agagagcaga agaaaagcag aagcgaagct cagatctgct gggaggaaga 180

ttacattttg tcccctcctg gggtcttgca cagtggcagg tgacattcgt gttacaggaa 240

tgactgccag ggcctgggcc tcgtggcggt cttcagctct gctcctcctg cttgtcccag 300

gctattttcc tctgagccac cccatgaccg tggcgggccc cgtgggggga tccctgagtg 360

tgcagtgtcg ctatgagaag gaacacagga ccctcaacaa attctggtgc agaccaccac 420

agattctccg atgtgacaag attgtggaga ccaaagggtc agcagggaaa aggaatggcc 480

gagtgtccat cagggacagt cctgcaaacc tcagcttcac agtgaccctg gagaatctca 540

cagaggagga cgcaggcacc tactggtgtg gggtggatac accgtggctc cgagactttc 600

atgatcccat tgtcgaggtt gaggtgtccg tgttcccggc cgggacgacc acagcctcca 660

gcccccagag ctccatgggc acctcaggtc ctcccacgaa gctgcccgtg cacacctggc 720

ccagcgtgac cagaaaggac agccccgaac ccagcccaca ccctggctcc ctgttcagca 780

atgtccgctt cctgctcctg gtcctcttgg agctgccccc gctcctgagc atgctgggtg 840

ccgtcctctg ggtgaacaga cctcagagaa gctctagaag caggcagaat tggcccaagg 900

gtgagaacca gtagcatctg ctgtccatca aggccctgtg ctgcaacaga gcccctctgg 960

ggactggaat gacctcctga ccatcaaggc ctgcaacaga gcccctctgg gggactggaa 1020

tgacctcctg accactcccc cccgggctgc tctctccaac atctcctgga atcctttgtg 1080

agcctccttc agccttttcc ctgtgcccga tccaacatgt gacacatgag gactttagag 1140

cacaatggat c 1151

<210> 2

<211> 224

<212> PRT

<213> Homo sapiens

<400> 2

Met Thr Ala Arg Ala Trp Ala Ser Trp Arg Ser Ser Ala Leu Leu Leu
1 5 10 15

Leu Leu Val Pro Gly Tyr Phe Pro Leu Ser His Pro Met Thr Val Ala
20 25 30

Gly Pro Val Gly Gly Ser Leu Ser Val Gln Cys Arg Tyr Glu Lys Glu
35 40 45

His Arg Thr Leu Asn Lys Phe Trp Cys Arg Pro Pro Gln Ile Leu Arg
50 55 60

Cys Asp Lys Ile Val Glu Thr Lys Gly Ser Ala Gly Lys Arg Asn Gly
65 70 75 80

Arg Val Ser Ile Arg Asp Ser Pro Ala Asn Leu Ser Phe Thr Val Thr
85 90 95

Leu Glu Asn Leu Thr Glu Glu Asp Ala Gly Thr Tyr Trp Cys Gly Val
100 105 110

Asp Thr Pro Trp Leu Arg Asp Phe His Asp Pro Ile Val Glu Val Glu
115 120 125

Val Ser Val Phe Pro Ala Gly Thr Thr Thr Ala Ser Ser Pro Gln Ser
130 135 140

Ser Met Gly Thr Ser Gly Pro Pro Thr Lys Leu Pro Val His Thr Trp
145 150 155 160

Pro Ser Val Thr Arg Lys Asp Ser Pro Glu Pro Ser Pro His Pro Gly
165 170 175

Ser Leu Phe Ser Asn Val Arg Phe Leu Leu Leu Val Leu Leu Glu Leu
180 185 190

Pro Leu Leu Leu Ser Met Leu Gly Ala Val Leu Trp Val Asn Arg Pro
195 200 205

Gln Arg Ser Ser Arg Ser Arg Gln Asn Trp Pro Lys Gly Glu Asn Gln
210 215 220

<210> 3

<211> 1560

<212> DNA

<213> Homo sapiens

<400> 3
ggaggagctg ggactctggc ttgtgttttc caggatgttt tgctctgagc aaatgcagga 60

ccgtggcggg ccccgtgggg ggatccctga gtgtgcagtg tccctatgag aaggaacaca 120

ggaccctcaa caaatactgg tgcagaccac cacagatttt cctatgtgac aagattgtgg 180

agaccaaagg gtcagcagga aaaaggaacg gccgagtgtc catcagggac agtcctgcaa 240

acctcagctt cacagtgacc ctggagaatc tcacagagga ggatgcaggc acctactggt 300

gtggggtgga tacaccgtgg ctccgagact ttcatgatcc cgttgtcgag gttgaggtgt 360

ccgtgttccc ggcatcaacg tcaatgacac ctgcaagtat cactgcggcc aagacctcaa 420
caatcacaac tgcatttcca cctgtatcat ccactaccct gtttgcagtg ggtgccaccc 480
acagtgccag catccaggag gaaactgagg aggtggtgaa ctcacagctc ccgctgctcc 540
tctccctgct ggcattgttg ctgcttctgt tggtgggggc ctccctgcta gcctggagga 600
tgtttcagaa atggatcaaa gctggtgacc attcagagct gtcccagaac cccaagcagg 660
ctgccacgca gagtgagctg cactacgcaa atctggagct gctgatgtgg cctctgcagg 720
aaaagccagc accaccaagg gaggtggagg tggaatacag cactgtggcc tcccccaggg 780
aagaacttca ctatgcctcg gtggtgtttg attctaacac caacaggata gctgctcaga 840
ggcctcggga ggaggaacca gattcagatt acagtgtgat aaggaagaca taggcttttg 900
tcctgcctcg ccatcggagc tctcatgggc cccaggaagt ccagggacag ctcccttata 960
cctggcccac gtccttctca gcctgccctc gacaacagtg accaacagac aggcagctgg 1020
gtttcccagg ccatccctct gttgccatca gcttgattgg cttccccgag ggccagcagg 1080
gctgggggct ccggagagca gcaggaagca ctcccagcca ccagtgcctg tcgcctcttt 1140
ccccttttgcc cctgcttcat cccagctctg tgtgtggagg acaaagcttc ttcctgcgtg 1200
gctccaggaa aagatgtggc tcacgtaggt ggcacctgcc aatagctttg tcaatcacag 1260
ccccatagga acgtctggaa ttgcttggga gttggggaga actgtcaaga agagtgaaga 1320
gagtgccaaa gcggagatct gttcacctgg gggccatgga ggggggaccc actaaagatc 1380
aagatcaaag attctcccca tctcacagac aaggaaactg aggccagagg gaggagagaa 1440
ttgctcatgg ctccagaact ggtggcaagt ttctctggac tcttaggttt atttttaata 1500
tgaaatataa aaacagtttc aaatatctta ttgagggaga agtaaaaact tatttaaaca 1560

<210> 4

<211> 301

<212> PRT

<213> Homo sapiens

<400> 4

Met Trp Leu Pro Trp Ala Leu Leu Leu Leu Trp Val Pro Gly Cys Phe
1 5 10 15

```
Ala Leu Ser Lys Cys Arg Thr Val Ala Gly Pro Trp Gly Ser Leu Ser
            20                  25                  30

Val Gln Cys Pro Tyr Glu Lys Glu His Arg Thr Leu Asn Lys Tyr Trp
        35                  40                  45

Cys Arg Pro Pro Gln Ile Phe Leu Cys Asp Lys Ile Val Glu Thr Lys
    50                  55                  60

Gly Ser Ala Gly Lys Arg Asn Gly Arg Val Ser Ile Arg Asp Ser Pro
65                  70                  75                  80

Ala Asn Leu Ser Phe Thr Val Thr Leu Glu Asn Leu Thr Glu Glu Asp
                85                  90                  95

Ala Gly Thr Tyr Trp Cys Gly Val Asp Thr Pro Trp Leu Arg Asp Phe
            100                 105                 110

His Asp Pro Val Val Glu Val Glu Val Ser Val Phe Pro Ala Ser Thr
        115                 120                 125

Ser Met Thr Pro Ala Ser Ile Thr Ala Ala Lys Thr Ser Thr Ile Thr
    130                 135                 140

Thr Ala Phe Pro Pro Val Ser Ser Thr Thr Leu Phe Ala Val Gly Ala
145                 150                 155                 160

Thr His Ser Ala Ser Ile Gln Glu Glu Thr Glu Glu Val Val Asn Ser
                165                 170                 175

Gln Leu Pro Leu Leu Leu Ser Leu Leu Ala Leu Leu Leu Leu Leu Leu
            180                 185                 190

Val Gly Ala Ser Leu Leu Ala Trp Arg Met Phe Gln Lys Trp Ile Lys
        195                 200                 205

Trp Ile Lys Ala Gly Asp His Ser Glu Leu Ser Gln Asn Pro Lys Gln
    210                 215                 220

Ala Ala Thr Gln Ser Glu Leu His Tyr Ala Asn Leu Glu Leu Leu Met
225                 230                 235                 240
```

Trp Pro Leu Gln Glu Lys Pro Ala Pro Pro Arg Glu Val Glu Val Glu
245 250 255

Tyr Ser Thr Val Ala Ser Pro Arg Glu Glu Leu His Tyr Ala Ser Val
260 265 270

Val Phe Asp Ser Asn Thr Asn Arg Ile Ala Ala Gln Arg Pro Arg Glu
275 280 285

Glu Glu Pro Asp Ser Asp Tyr Ser Val Ile Arg Lys Thr
290 295 300

<210> 5

<211> 674

<212> DNA

<213> Homo sapiens

<400> 5
ttggattcca gctgggacct agatttgctg aggacggaag ccaaggagac aggaacatgt 60

ggctgctccc agctctactc cttctctgcc tctcaggctg tttgtctctg aagggccccg 120

gctctgtgac tggcactgcg ggggactctc tgacagtgtg gtgtcagtat gagagcatgt 180

acaagggata taacaagtac tggtgccgag gacagtacga cacgtcatgt gagagcattg 240

tggagaccaa gggagaagag aaggtggaga ggaatggccg cgtgtccatc agagaccacc 300

cggaggctct cgccttcact gtgaccatgc agaacctcaa tgaagatgat gctggatctt 360

actggtgcaa aattcagaca gtgtgggtcc tggattcatg gtcacgcgat ccctcggacc 420

tggttagggt gtatgtttcc ccagcaatta caaccccaag gaggaccaca catccagcca 480

cacctcccat cttcctggtg gtgaaccctg ggcgaaacct cagcaccagg gaggtgttga 540

cccaaaattc agggttccgg ctcagcagcc ctcacttcct gctcgtggtc cttctgaagc 600

tgcccctgct cctgagcatg ctgggtgctg ttttctgggt gaacaggcct cagtgggctc 660

ctcctggaag atag 674

<210> 6

<211> 205

<212> PRT

<213> Homo sapiens

<400> 6

```
Met Trp Leu Leu Pro Ala Leu Leu Leu Leu Cys Leu Ser Gly Cys Leu
1               5                  10                  15

Ser Leu Lys Gly Pro Gly Ser Val Thr Gly Thr Ala Gly Asp Ser Leu
            20                  25                  30

Thr Val Trp Cys Gln Tyr Glu Ser Met Tyr Lys Gly Tyr Asn Lys Tyr
        35                  40                  45

Trp Cys Arg Gly Gln Tyr Asp Thr Ser Cys Glu Ser Ile Val Glu Thr
    50                  55                  60

Lys Gly Glu Glu Lys Val Glu Arg Asn Gly Arg Val Ser Ile Arg Asp
65                  70                  75                  80

His Pro Glu Ala Leu Ala Phe Thr Val Thr Met Gln Asn Leu Asn Glu
                85                  90                  95

Asp Asp Ala Gly Ser Tyr Trp Cys Lys Ile Gln Thr Val Trp Val Leu
            100                 105                 110

Asp Ser Trp Ser Arg Asp Pro Ser Asp Leu Val Arg Val Tyr Val Ser
        115                 120                 125

Pro Ala Ile Thr Thr Pro Arg Arg Thr Thr His Pro Ala Thr Pro Pro
    130                 135                 140

Ile Phe Leu Val Val Asn Pro Gly Arg Asn Leu Ser Thr Arg Glu Val
145                 150                 155                 160

Leu Thr Gln Asn Ser Gly Phe Arg Leu Ser Ser Pro His Phe Leu Leu
                165                 170                 175
```

Val Val Leu Leu Lys Leu Pro Leu Leu Leu Ser Met Leu Gly Ala Val
180 185 190

Phe Trp Val Asn Arg Pro Gln Trp Ala Pro Pro Gly Arg
195 200 205

<210> 7

<211> 510

<212> DNA

<213> Homo sapiens

<400> 7
atgtggctgt ccccagctct gctgcttctc atcctcccag gttactccat tgccgctaaa 60

atcactggtc caacaacagt gaatggctcg gagcagggct cattgactgt gcagtgtgct 120

tatggctcag gctgggagac ctacttgaag tggcggtgtc aaggagctga ttggaattac 180

tgtaacatcc ttgttaaaac aaatggatca gagcaggagg taaagaagaa tcgagtttcc 240

atcagggaca atcagaaaaa ccacgtgttc accgtgacca tggagaatct caaaagagat 300

gatgctgaca gttattggtg tgggactgag agacctggaa ttgatcttgg ggtcaaagtt 360

caagtgacca ttaacccagc tcagtgcctg agtctgttgc ccacagatga cagggtgatg 420

gttccagttt cagcccacag gccaaaggga ccccccttccc tggtaaccag agaccccaat 480

ccctgccagt gccttcttgg aacttcttta 510

<210> 8

<211> 174

<212> PRT

<213> Homo sapiens

<400> 8

Met Trp Leu Ser Pro Ala Leu Leu Leu Leu Ile Leu Pro Gly Tyr Ser
1 5 10 15

Ile Ala Ala Lys Ile Thr Gly Pro Thr Thr Val Asn Gly Ser Glu Gln
20 25 30

Gly Ser Glu Gln Gly Ser Leu Thr Val Gln Cys Ala Tyr Gly Ser Gly
35 40 45

Trp Glu Thr Tyr Leu Lys Trp Arg Cys Gln Gly Ala Asp Trp Asn Tyr
50 55 60

Cys Asn Ile Leu Val Lys Thr Asn Gly Ser Glu Gln Glu Val Lys Lys
65 70 75 80

Asn Arg Val Ser Ile Arg Asp Asn Gln Lys Asn His Val Phe Thr Val
85 90 95

Thr Met Glu Asn Leu Lys Arg Asp Asp Ala Asp Ser Tyr Trp Cys Gly
100 105 110

Thr Glu Arg Pro Gly Ile Asp Leu Gly Val Lys Val Gln Val Thr Ile
115 120 125

Asn Pro Ala Gln Cys Leu Ser Leu Leu Pro Thr Asp Asp Arg Val Met
130 135 140

Val Pro Val Ser Ala His Arg Pro Lys Gly Pro Pro Ser Leu Val Thr
145 150 155 160

Arg Asp Pro Asn Pro Cys Gln Cys Leu Leu Gly Thr Ser Leu
165 170

<210> 9

<211> 1026

<212> DNA

<213> Homo sapiens

<400> 9
ccacgcgtcc gctccggtac tctccaccag ctttgagaac ccaaacccca gaagaggcca 60

gagaaggaac cgagaagatg tagaaggaaa aagagcctca gacccttgct gcccacaagg 120

acttcccatg ttgtgagatg acccagaggg ctggggctgc catgctgcct tcagctctgc 180

tccttctctg tgtcccaggc tgtctgactg tgagtggccc cagcaccgtg atgggcgccg 240

tgggggaatc cctgagtgtt cagtgtcggt atgaagacaa atacaagacg tttaacaaat 300
actggtgcag acaaccatgc ttgccaattt ggcatgaaat ggtggagacc ggagggtctg 360
agggagtggt gaggagtgac caagtgatca tcacggacca tcctggagac ctcaccttca 420
ccgtgacctt ggagaacctc acggcagacg atgcaggaaa ataccgatgt gggattgcaa 480
caatactgca ggaagatggc ctgtctggtt tcctgcccga tcccttcttc caggttcaag 540
tgctggtctc atcggcctcc agtactgaga actctgtgaa gacacctgca tctcccacca 600
ggcccagcca atgccaaggg tccctgccca gcagcacctg cttcctgctt ctcccactcc 660
tgaaggtgcc tctgctcctg agcatactcg gtgctatcct ctgggtgaac aggccttgga 720
ggactccttg gacagagtca tgaacaggag aacttgcaac accccatgcc cattggaacc 780
ctgtccagag acacagcccc tctgactgca aaaaggactt ctgaccctga ccctcatatt 840
tctttccatc ttatcacccg gatacttttt aaaagttaaa aaaaaaatgt aggccgggtg 900
cggtggctta cacctgcaat cccagcactt tgggaggcca aggcaaggtg gatcacttga 960
gtccagggaa gtttgagagc ctgggcagca tggtcagacc tcatctctac aaaaaaaaaa 1020
aaaaag 1026

<210> 10

<211> 193

<212> PRT

<213> Homo sapiens

<400> 10

Met Leu Pro Ser Ala Leu Leu Leu Leu Cys Val Pro Gly Cys Leu Thr
1 5 10 15

Val Ser Gly Pro Ser Thr Val Met Gly Ala Val Gly Glu Ser Leu Ser
20 25 30

Val Gln Cys Arg Tyr Glu Asp Lys Tyr Lys Thr Phe Asn Lys Tyr Trp
35 40 45

Cys Arg Gln Pro Cys Leu Pro Ile Trp His Glu Met Val Glu Thr Gly
50 55 60

Gly Ser Glu Gly Val Val Arg Ser Asp Gln Val Ile Ile Thr Asp His
65 70 75 80

Pro Gly Asp Leu Thr Phe Thr Val Thr Leu Glu Asn Leu Thr Ala Asp
85 90 95

Asp Ala Gly Lys Tyr Arg Cys Gly Ile Ala Thr Ile Leu Gln Glu Asp
100 105 110

Gly Leu Ser Gly Phe Leu Pro Asp Pro Phe Phe Gln Val Gln Val Leu
115 120 125

Val Ser Ser Ala Ser Ser Thr Glu Asn Ser Val Lys Thr Pro Ala Ser
130 135 140

Pro Thr Arg Pro Ser Gln Cys Gln Gly Ser Leu Pro Ser Ser Thr Cys
145 150 155 160

Phe Leu Leu Leu Pro Leu Leu Lys Val Pro Leu Leu Leu Ser Ile Leu
165 170 175

Gly Ala Ile Leu Trp Val Asn Arg Pro Trp Arg Thr Pro Trp Thr Glu
180 185 190

Ser

<210> 11

<211> 1352

<212> DNA

<213> Homo sapiens

<400> 11
gtctagatgt gcagaaggtg caagccagag ctcaggcaga acttccagag tgcatctggg 60

atctgcattt gccactggtt gcagatcagg cggacgagga gccgggaagg cagagccatg 120

tggctgcccc ctgctctgct ccttctcagc ctctcaggct gtttctccat ccaaggccca 180

gagtctgtga gagccccaga gcaggggtcc ctgacggttc aatgccacta taagcaagga 240

tgggagacct acattaagtg gtggtgccga ggggtgcgct gggatacatg caagatcctc 300

attgaaacca gagggtcgga gcaaggagag aagagtgacc gtgtgtccat caaggacaat 360

cagaaagacc gcacgttcac tgtgaccatg gaggggctca ggcgagatga cgcagatgtt 420

tactggtgtg ggattgaaag aagaggacct gaccttggga ctcaagtgaa agtgatcgtt 480

gacccagagg gagcggcttc cacaacagca agctcaccta ccaacagcaa tatggcagtg 540

ttcatcggct cccacaagag gaaccactac atgctcctgg tatttgtgaa ggtgcccatc 600

ttgctcatct tggtcactgc catcctctgg ttgaaggggt ctcagagggt ccctgaggag 660

ccaggggaac agcctatcta catgaacttc tccgaacctc tgactaaaga catggccact 720

tagagagatg gatctgcaga gccttcctgc cctggccacg tttccagaag agactcgggc 780

tgtggaagga acatctacga gtcctcggga tgcagtgact gagatagggg ccctgggcct 840

ccgccctggc cttggagctg gtgggcacct ccctgttctg cacagctcag ggacttagcc 900

aggtcctctc ctgagccacc atcacctcct ggggtgccag cacctgttct cttggtcagg 960

agctgtagag atggagctca agcactggac gactctgtcc ccactgctgg aataactcgg 1020

gcacagagca tgggaccaaa gtacagaaag aggttggggg agacccccc agccctagac 1080

ttccatcatt ccggagacca actcaacacc gtctttgcct gagaacctga tatatccgtg 1140

tttttaaatt ttttttttc tagcaaagtt gggttttaat gacttatgtt cataggaaac 1200

ctctctgatc ccacacacaa ggagggtgat tctgggatga gttcctggtt ctagggcatg 1260

aggggctgga tggaccctgt ccccagggag gacatggctc tgagtccaca gggctgagga 1320

ggcaatggga acctccctgg cccggcccgg tg 1352

<210> 12

<211> 158

<212> PRT

<213> Homo sapiens

<400> 12

Met Trp Leu Pro Pro Ala Leu Leu Leu Leu Ser Leu Ser Gly Cys Phe
1 5 10 15

Ser Ile Gln Gly Pro Glu Ser Val Arg Ala Pro Glu Gln Gly Ser Leu
20 25 30

Thr Val Gln Cys His Tyr Lys Gln Gly Trp Glu Thr Tyr Ile Lys Trp
35 40 45

Trp Cys Arg Gly Val Arg Trp Asp Thr Cys Lys Ile Leu Ile Glu Thr
50 55 60

Arg Gly Ser Glu Gln Gly Glu Lys Ser Asp Arg Val Ser Ile Lys Asp
65 70 75 80

Asn Gln Lys Asp Arg Thr Phe Thr Val Thr Met Glu Gly Leu Arg Arg
85 90 95

Asp Asp Ala Asp Val Tyr Trp Cys Gly Ile Glu Arg Arg Gly Pro Asp
100 105 110

Leu Gly Thr Gln Val Lys Val Ile Val Asp Pro Glu Gly Ala Ala Ser
115 120 125

Thr Thr Ala Ser Ser Pro Thr Asn Ser Asn Met Ala Val Phe Ile Gly
130 135 140

Ser His Lys Arg Asn His Tyr Met Leu Leu Gly Thr Ser Leu
145 150 155

<210> 13

<211> 812

<212> DNA

<213> Homo sapiens

<400> 13
gaagttcaag ggcgagagtg agtaccagca gaaggctggg agtctgtagt ttgttcctgc 60

tgccaggctc cactgagggg aacggggacc tgtctgaaga gaagatgccc ctgctgacac 120

tctacctgct cctcttctgg ctctcaggct actccattgt cactcaaatc accggtccaa 180

caacagtgaa tggcttggag cggggctcct tgaccgtgca gtgtgtttac agatcaggct 240

gggagaccta cttgaagtgg tggtgtcgag gagctatttg gcgtgactgc aagatccttg 300

ttaaaaccag tgggtcagag caggaggtga agagggaccg ggtgtccatc aaggacaatc 360

agaaaaaccg cacgttcact gtgaccatgg aggatctcat gaaaactgat gctgacactt 420

actggtgtgg aattgagaaa actggaaatg accttggggt cacagttcaa gtgaccattg 480

acccagcacc agtcacccaa gaagaaacta gcagctcccc aactctgacc ggccaccact 540

tggacaacag gcacaagctc ctgaagctca gtgtcctcct gcccctcatc ttcaccatat 600

tgctgctgct tttggtggcc gcctcactct tggcttggag gatgatgaag taccagcaga 660

aaggtgagag gacctgggta ctgcagcccc tggagggcga cctctgctat gcagacctga 720

ccctgcagct ggccggaacc tccccgcaaa aggctaccac gaagctttcc tctgcccagg 780

ttgaccaggt ggaagtggaa tatgtcacca tg 812

<210> 14

<211> 287

<212> PRT

<213> Homo sapiens

<400> 14

Met Pro Leu Leu Thr Leu Tyr Leu Leu Leu Phe Trp Leu Ser Gly Tyr
1 5 10 15

Ser Ile Val Thr Gln Ile Thr Gly Pro Thr Thr Val Asn Gly Leu Glu
20 25 30

Arg Gly Ser Leu Thr Val Gln Cys Val Tyr Arg Ser Gly Trp Glu Thr
35 40 45

Tyr Leu Lys Trp Trp Cys Arg Gly Ala Ile Trp Arg Asp Cys Lys Ile
50 55 60

Leu Val Lys Thr Ser Gly Ser Glu Gln Glu Val Lys Arg Asp Arg Val
65 70 75 80

Ser Ile Lys Asp Asn Gln Lys Asn Arg Thr Phe Thr Val Thr Met Glu
85 90 95

Asp Leu Met Lys Thr Asp Ala Asp Thr Tyr Trp Cys Gly Ile Glu Lys
100 105 110

Thr Gly Asn Asp Leu Gly Val Thr Val Gln Val Thr Ile Asp Pro Ala
115 120 125

Pro Val Thr Gln Glu Glu Thr Ser Ser Ser Pro Thr Leu Thr Gly His
130 135 140

His Leu Asp Asn Arg His Lys Leu Leu Lys Leu Ser Val Leu Leu Pro
145 150 155 160

Leu Ile Phe Thr Ile Leu Leu Leu Leu Leu Val Ala Ala Ser Leu Leu
165 170 175

Ala Trp Arg Met Met Lys Tyr Gln Gln Lys Gly Glu Arg Thr Trp Val
180 185 190

Leu Gln Pro Leu Glu Gly Asp Leu Cys Tyr Ala Asp Leu Thr Leu Gln
195 200 205

Leu Ala Gly Thr Ser Pro Gln Lys Ala Thr Thr Lys Leu Ser Ser Ala
210 215 220

Gln Val Asp Gln Val Glu Val Glu Tyr Val Thr Met Ala Ser Leu Pro
225 230 235 240

Lys Glu Asp Ile Ser Tyr Ala Ser Leu Thr Leu Gly Ala Glu Asp Gln
245 250 255

Glu Pro Thr Tyr Cys Asn Met Gly His Leu Ser Ser His Leu Pro Gly
260 265 270

Arg Gly Pro Glu Glu Pro Thr Glu Tyr Ser Thr Ile Ser Arg Pro
275 280 285

<210> 15

<211> 2389

<212> DNA

<213> mouse

<400> 15

cagcccggca gaagctaaag ctcagaagag ctcccaattg caggcaactg cagtgtccag 60

cacccaccat gaggcctctg gtcctgctat ggggctgcct ggtgctccca ggttatgaag 120

ccctgaaggg tccaaaggag atcagtggat ttgaaggtga caccgtgtcc ctgcggtgta 180

cctacgtgga gaagatgaag gagcacagga agtattggtg ccggcagggt ggcatcctgg 240

tgtcacgctg cggtgacatt gtctacgcaa atcaggacca ggaggtgact cgaggcagga 300

tgtccatccg agacagtccc caagagctct cgatgaccgt gatcatgagg gaccttaccc 360

tgaaggattc agggaagtac tggtgtggga ttgacagact gggccgcgat gagtcttttg 420

aggttacact cattgtcttt ccagggagct cccgtccagt cgtctggctg ccccttacca 480

caccacagga ctccagggct gtagccagca gtgtctccaa gcccagtgtg tccatcccga 540

tggtccgcat gatggcccca gtcctgatac tcttgtccct gctgttggct gcaggactaa 600

ttgcctttgg cagccacatg ctccggtgga gaaagaaagc ttggctggcc acagagacac 660

agaagaacga gaaggtctac cttgaaacct cgctgccagg gaacggctgg accactgaag 720

actcgacgat agaccttgca gtgactcctg aatgtctcag aaacctcaac ccttctgctg 780

tgccctctcc tgagacacag aacctcagtc agtctacaga ggaggaagag gcagctcgtt 840

ccctggacga cgacaaggag gacgtgatgg cacccccctcc cttgcagatg tctgcggagg 900

aactggcctt ctctgagttc atctctgtgt aattgcagaa tgccccgtgg tcggccaggg 960

attgtgaagc tgaacagctg agttctcatg aattcttggg ttctactcac agtccacggc 1020

tctgtccacc ttccttccgg ctctctttca tgccccagat ggagaagtgt cttggtccct 1080

gaagcccgga tggtacttaa caagtccagc cagaggctgg aacctcccgc atattctaat 1140

ccctgggaag agttaatggg tgtgtgggcc ttcatcgggg cctggccagg ctccatggat 1200

aaaggctgag tttgtgtgcg ttccaggaaa ttccctgggc atggatgtcc agcaacagtc 1260

ccacctccca tcctcggaag atcccacctt cacctcctcc agcaacagtc ccacctccca 1320

tcctcggaag atcccacctt cacctccctc taattcttct gcatcaattg ctatggagga 1380

gacaacatat gtgtgtctat gaaacacctg catcctggcc tcttagaaaa taattaaaac 1440

aaaattctgc agacccatca agactcacca aaccatctct agggcagggc ctgggactcc 1500

acagttctga caagtgaccc tgccattcct acccttgggt ctgatgaatc ctcagcccat 1560

tttagctaga atcttccttc cttccttcct tccttccttc cttccttcct tccttccttt 1620

ccttcctttc cttcctttcc ttcctttcct tcctttcctt cctttcttcg ttccttcctg 1680

ccttccctgt ggggtttcct atatgcttcc tagacctaga tcatgacagt acggtcccag 1740

taggcacttc ctgatgcctc tctggtcagg cacactatgg tgacagccag cccaaggcag 1800

ccagggatca gctgtctctc catcctcctt ccccaaggcc ctgtgtccct tgctttggta 1860

ggacactgga ggaagtctcg atatcattcc tgtccagagt ggttactcct ccatggggtc 1920

tggaggctga gggagaggag gaggaggagg ataccagagt gggaaggggg gcggggaaac 1980

agaagacact agactctagt tactagagga gaatactaaa tccagtactg ttgagtgagg 2040

gaaagatgga ctggctcaac tatttttttt ccttttttcta ttttgttttg aaaagtaaga 2100

tgttgggaag ggaggtgttc agaatataaa acagaaatgt agggagaata caaaagaagt 2160

gctgtttcta ggatcatata taacctcacc aaaccttgtt gacggctctg cctgagcttg 2220

caggaccccc ctcccttccc ctcccccttcc agtatttgca gatgctccgt ttacagaggg 2280

gtcctctcac catgcacagc ccactacgca tcacacgctg tctcgtcata agcatccctc 2340

cgtgttctac gaactttgta caataaactt tctcagctgt gtagtattt 2389

<210> 16

<211> 287

<212> PRT

<213> mouse

<400> 16

Met Arg Pro Leu Val Leu Leu Trp Gly Cys Leu Val Leu Pro Gly Tyr
1 5 10 15

Glu Ala Leu Lys Gly Pro Lys Glu Ile Ser Gly Phe Glu Gly Asp Thr
20 25 30

Val Ser Leu Arg Cys Thr Tyr Val Glu Lys Met Lys Glu His Arg Lys
35 40 45

Tyr Trp Cys Arg Gln Gly Gly Ile Leu Val Ser Arg Cys Gly Asp Ile
50 55 60

Val Tyr Ala Asn Gln Asp Gln Glu Val Thr Arg Gly Arg Met Ser Ile
65 70 75 80

Arg Asp Ser Pro Gln Glu Leu Ser Met Thr Val Ile Met Arg Asp Leu
85 90 95

Thr Leu Lys Asp Ser Gly Lys Tyr Trp Cys Gly Ile Asp Arg Leu Gly
100 105 110

Arg Asp Glu Ser Phe Glu Val Thr Leu Ile Val Phe Pro Gly Ser Ser
115 120 125

Arg Pro Val Val Trp Leu Pro Leu Thr Thr Pro Gln Asp Ser Arg Ala
130 135 140

Val Ala Ser Ser Val Ser Lys Pro Ser Val Ser Ile Pro Met Val Arg
145 150 155 160

Met Met Ala Pro Val Leu Ile Leu Leu Ser Leu Leu Leu Ala Ala Gly
165 170 175

Leu Ile Ala Phe Gly Ser His Met Leu Arg Trp Arg Lys Lys Ala Trp
180 185 190

Leu Ala Thr Glu Thr Gln Lys Asn Glu Lys Val Tyr Leu Glu Thr Ser
195 200 205

Leu Pro Gly Asn Gly Trp Thr Thr Glu Asp Ser Thr Ile Asp Leu Ala
210 215 220

Val Thr Pro Glu Cys Leu Arg Asn Leu Asn Pro Ser Ala Val Pro Ser
225 230 235 240

Pro Glu Thr Gln Asn Leu Ser Gln Ser Thr Glu Glu Glu Glu Ala Ala
245 250 255

Arg Ser Leu Asp Asp Asp Lys Glu Asp Val Met Ala Pro Pro Pro Leu
260 265 270

Gln Met Ser Ala Glu Glu Leu Ala Phe Ser Glu Phe Ile Ser Val
275 280 285

<210> 17

<211> 1111

<212> DNA

<213> mouse

<400> 17
gaaatgaccc aactggcctc agctgtgtgg ctgcccacgc tgttgctgct gctgctgctt 60

ttttggcttc caggctgtgt ccctctgcat ggtcccagca ccatgacagg aagtgtgggt 120

caatccctga gtgtgtcgtg tcagtatgag gagaaattta agactaagga caaatactgg 180

tgcagagggt cacttaaggt actgtgcaaa gatattgtca agaccagcag ctcagaagaa 240

gctaggagtg gcagagtgac catcagggac catccagaca acctcacctt tacagtgacc 300

tatgagagcc tcaccctgga ggatgcagac acctacatgt gtgcggtgga tatatcactt 360

tttgatggct ccttggggtt cgataagtac ttcaagattg agttgtctgt ggttccaagt 420

gaggacccag gaccaacact agagacacct gtggtgtcca ccagtctgcc taccaagggt 480

cccgccctag gatccaacac agaggaccgc cgtgagcatg actattccca gggcttgagg 540

ctcccagcgc tgttgtctgt gttagctctc ctgctgtttc tgttggtggg gacctctctg 600

ctggcctgga ggatgttcca gaagcggctg gtcaaagctg ataggcatcc agagctgtcc 660

cagaacctca gacaggcttc tgagcagaat gagtgccagt atgtgaattt gcagctgcac 720

acgtggtctc tgagggaaga gccggtgcta ccaagtcagg tagaagtggt ggaatatagc 780

acattggcat taccccagga agagcttcac tattcatccg tggcattcaa ctcccagagg 840

caggattctc acgccaatgg agattctctt catcaacctc aggaccagaa agcagagtac 900

agtgagatcc agaagcccag aaaaggactc tctgaccttt acctgtgact ccttgtcacc 960

tgatcctctc agtggtgact accaggttcc aaggctccct gctggctgct gccctcaatg 1020

tcatgagcct cagtggcttc actaaagatg agcaggagcc agggctctgt gggcacagtc 1080

tcatcccact ggctctctcc tcttagcctg t 1111

<210> 18

<211> 314

<212> PRT

<213> mouse

<400> 18

```
Met Thr Gln Leu Ala Ser Ala Val Trp Leu Pro Thr Leu Leu Leu Leu
1               5                  10                  15

Leu Leu Leu Phe Trp Leu Pro Gly Cys Val Pro Leu His Gly Pro Ser
            20                  25                  30

Thr Met Thr Gly Ser Val Gly Gln Ser Leu Ser Val Ser Cys Gln Tyr
        35                  40                  45

Glu Glu Lys Phe Lys Thr Lys Asp Lys Tyr Trp Cys Arg Gly Ser Leu
    50                  55                  60

Lys Val Leu Cys Lys Asp Ile Val Lys Thr Ser Ser Ser Glu Glu Ala
65                  70                  75                  80

Arg Ser Gly Arg Val Thr Ile Arg Asp His Pro Asp Asn Leu Thr Phe
                85                  90                  95

Thr Val Thr Tyr Glu Ser Leu Thr Leu Glu Asp Ala Asp Thr Tyr Met
            100                 105                 110

Cys Ala Val Asp Ile Ser Leu Phe Asp Gly Ser Leu Gly Phe Asp Lys
        115                 120                 125

Tyr Phe Lys Ile Glu Leu Ser Val Val Pro Ser Glu Asp Pro Gly Pro
    130                 135                 140

Thr Leu Glu Thr Pro Val Val Ser Thr Ser Leu Pro Thr Lys Gly Pro
145                 150                 155                 160

Ala Leu Gly Ser Asn Thr Glu Asp Arg Arg Glu His Asp Tyr Ser Gln
                165                 170                 175

Gly Leu Arg Leu Pro Ala Leu Leu Ser Val Leu Ala Leu Leu Leu Phe
            180                 185                 190
```

Leu Leu Val Gly Thr Ser Leu Leu Ala Trp Arg Met Phe Gln Lys Arg
195 200 205

Leu Val Lys Ala Asp Arg His Pro Glu Leu Ser Gln Asn Leu Arg Gln
210 215 220

Ala Ser Glu Gln Asn Glu Cys Gln Tyr Val Asn Leu Gln Leu His Thr
225 230 235 240

Trp Ser Leu Arg Glu Glu Pro Val Leu Pro Ser Gln Val Glu Val Val
245 250 255

Glu Tyr Ser Thr Leu Ala Leu Pro Gln Glu Glu Leu His Tyr Ser Ser
260 265 270

Val Ala Phe Asn Ser Gln Arg Gln Asp Ser His Ala Asn Gly Asp Ser
275 280 285

Leu His Gln Pro Gln Asp Gln Lys Ala Glu Tyr Ser Glu Ile Gln Lys
290 295 300

Pro Arg Lys Gly Leu Ser Asp Leu Tyr Leu
305 310

<210> 19

<211> 711

<212> DNA

<213> mouse

<400> 19
atgtggctgt ccccagcttt gcttcttctc agttttccag gctgcctctc catccaaggc 60

ccagcattgg tgaggggtcc agagcagggg tcagtgactg tgcaatgtcg ctatagctca 120

agatggcaaa ccaacaagaa gtggtggtgc cggggagcaa gctggagcac ttgcagggtc 180

ctcatccgat ccactgggtc agagaaagaa acgaagagcg gccggctgtc catcagggac 240

aatcagaaaa atcactcatt ccaggttacc atggagatgc tcaggcaaaa tgacacggac 300

acttactggt gtggtattga aaagttcgga actgaccgtg ggaccagagt taaagtgaac 360

gtctacttcg gccatatgca gaccttcttc agttcagcag ccacactgac tcctgagagg 420

gcagcagaga tgtgggtaaa gataccatgt cgacttctaa tcaacttccc tggcccactg 480

tggacggcag tacagacatg gtgtcttctg acttgcagaa gaggacttga agccagtcta 540

gttggggcct ttgtgggtgg gctgatgcaa gttccttcct gttctctggc cgtcgccatc 600

tttaccttcg tgctaacact gactcctcct agttcccagg aagcacacag cacaccgtca 660

tcacactcag ccccagtggc ttccaaggaa gagatgaacc gtctcttcta a 711

<210> 20

<211> 236

<212> PRT

<213> mouse

<400> 20

Met Trp Leu Ser Pro Ala Leu Leu Leu Leu Ser Phe Pro Gly Cys Leu
1 5 10 15

Ser Ile Gln Gly Pro Ala Leu Val Arg Gly Pro Glu Gln Gly Ser Val
20 25 30

Thr Val Gln Cys Arg Tyr Ser Ser Arg Trp Gln Thr Asn Lys Lys Trp
35 40 45

Trp Cys Arg Gly Ala Ser Trp Ser Thr Cys Arg Val Leu Ile Arg Ser
50 55 60

Thr Gly Ser Glu Lys Glu Thr Lys Ser Gly Arg Leu Ser Ile Arg Asp
65 70 75 80

Asn Gln Lys Asn His Ser Phe Gln Val Thr Met Glu Met Leu Arg Gln
85 90 95

Asn Asp Thr Asp Thr Tyr Trp Cys Gly Ile Glu Lys Phe Gly Thr Asp
100 105 110

Arg Gly Thr Arg Val Lys Val Asn Val Tyr Phe Gly His Met Gln Thr
115 120 125

Phe Phe Ser Ser Ala Ala Thr Leu Thr Pro Glu Arg Ala Ala Glu Met
130 135 140

Trp Val Lys Ile Pro Cys Arg Leu Leu Ile Asn Phe Pro Gly Pro Leu
145 150 155 160

Trp Thr Ala Val Gln Thr Trp Cys Leu Leu Thr Cys Arg Arg Gly Leu
165 170 175

Glu Ala Ser Leu Val Gly Ala Phe Val Gly Gly Leu Met Gln Val Pro
180 185 190

Ser Cys Ser Leu Ala Val Ala Ile Phe Thr Phe Val Leu Thr Leu Thr
195 200 205

Pro Pro Ser Ser Gln Glu Ala His Ser Thr Pro Ser Ser His Ser Ala
210 215 220

Pro Val Ala Ser Lys Glu Glu Met Asn Arg Leu Phe
225 230 235

<210> 21

<211> 819

<212> DNA

<213> mouse

<400> 21
aggaagtagc tcagagtgca aaggaagcag ataagaaaaa aacacatgga gagaacttga 60

acaagaaggt ggttgcctgg gctctgttac acacatctgg attccagcag cgacctggag 120

ttttctggag acagtaccca gtgaggcagg aggatgaggc tatgtgcagg tctgctcctt 180

ctctgcttcc aaggttgttt gtctctgacg ggccctggct ctgtgtctgg ctacgtagga 240

ggctctctcc gtgtgcagtg tcaatatagt ccatcatata agggctatat gaaatactgg 300

tgccgaggac cgcatgacac gacgtgtaaa actattgtag aaaccgacgg aagtgagaaa 360

gaaaagagga gtggcccagt gtccatcaga gaccatgctg cgaactccac catcacagtg 420

atcatggagg accttagcga agacgatgct gggtcttact ggtgcaagat tcagacttcc 480

tttatctggg attcgtggtc acgtgatcca tcggtcagcg taagggtgaa tgtttttcca 540

gtgaattctg ggcagaacct gaggattagt actaatgtga tgttcatctt ccaactgtgg 600

tccctgctca gcagcatcca gttccaggtc ctggtcttcc tgaagctgcc tctgtttctg 660

agcatgctct gtgctatctt ctgggtgaac agactttagg gggttcctgg gggcaatgta 720

gagtgaccca tccaagaact atgaagtgaa gcatcccagg aatgccctgg gaggaactca 780

gtcctgcatg cagactggac ttcattgttc tgtgtctca 819

<210> 22

<211> 181

<212> PRT

<213> mouse

<400> 22

Met Arg Leu Cys Ala Gly Leu Leu Leu Leu Cys Phe Gln Gly Cys Leu
1 5 10 15

Ser Leu Thr Gly Pro Gly Ser Val Ser Gly Tyr Val Gly Gly Ser Leu
20 25 30

Arg Val Gln Cys Gln Tyr Ser Pro Ser Tyr Lys Gly Tyr Met Lys Tyr
35 40 45

Trp Cys Arg Gly Pro His Asp Thr Thr Cys Lys Thr Ile Val Glu Thr
50 55 60

Asp Gly Ser Glu Lys Glu Lys Arg Ser Gly Pro Val Ser Ile Arg Asp
65 70 75 80

His Ala Ala Asn Ser Thr Ile Thr Val Ile Met Glu Asp Leu Ser Glu
85 90 95

Asp Asp Ala Gly Ser Tyr Trp Cys Lys Ile Gln Thr Ser Phe Ile Trp
100 105 110

Asp Ser Trp Ser Arg Asp Pro Ser Val Ser Val Arg Val Asn Val Phe
115 120 125

Pro Val Asn Ser Gly Gln Asn Leu Arg Ile Ser Thr Asn Val Met Phe
130 135 140

Ile Phe Gln Leu Trp Ser Leu Leu Ser Ser Ile Gln Phe Gln Val Leu
145 150 155 160

Val Phe Leu Lys Leu Pro Leu Phe Leu Ser Met Leu Cys Ala Ile Phe
165 170 175

Trp Val Asn Arg Leu
180

<210> 23

<211> 2487

<212> DNA

<213> mouse

<400> 23
gaagttactg agagaagtga acaagagaga cctaaaggca actcaagctg agctgcgagt 60

cctcacaggg tcctgacatc tgtcgtcaac aaggacatga gaggagacga ccatgtggca 120

gttctctgct ctactcctat tcttcctccc aggctgctgc acggctcagg attcagtcac 180

aggtccagag gaggtgagcg gtcaggagca gggctccttg acagtgcagt gcagatattc 240

ctcatactgg aagggttaca agaagtactg gtgccgagga gttcctcaga gatcatgtga 300

tattcttgtt gaaaccgata aatcagagca gctggtgaag aagaaccgtg tgtccatcag 360

ggacaaccag agagacttca tcttcacagt gaccatggag gatctgagga tgagcgatgc 420

tggcatttac tggtgtggaa ttacgaaagg tggacctgat cccatgttta aagttaatgt 480

gaacattgac caagccccaa aaagttcaat gatgaccacc acagccacag ttctgaaatc 540

catacaacca agcgctgaga acactggcaa ggaacaagtg actcagagca aagaagtgac 600

tcagagcagg ccccacacca ggtccctgct gagcagcatc tacttcctgc tgatggtctt 660

tgtggagtta cccctgctcc tgagcatgct cagtgctgtc ctctgggtga ccaggcctca 720

gagatgcttt gggagaggtg aaaatgacct ggtgaagacc catagtcctg ttgcctagga 780

tagagagaaa cagttcccaa gaaatggaaa ataatctctg tctctctgtt gtctctgtct 840

ctgtctctgg ggtgtatgta tgtgtgtgca tgcaccttgc cggggcagat gtgtatgtgg 900
gagacatcta ctggaatcat tcccttagta tctgagacag ggtttctaat tgaccagcac 960
ctttgtgtgg taggtcagac agctggccag ggaactccag ggatctccct gcctctacca 1020
tccatcctga gattgcaagc atacacgagt gccctagctt aaaaacaaac aaacaaacaa 1080
acaccttagg ttgtagggat tgaactcatg tccttgtacc tgcaaggaag gtaggcgatt 1140
tacctgctga gccatctccc caatctggag aagactcaat ctagtaaaga acaactcatc 1200
agcagtacca tggctctgat gtgctgcaca accagactca gactaatccc actcctatag 1260
cagggacagc tgagttctgg aacccattca tgtgcccctc tctcaggaca tcctgcaata 1320
cctatctggg gctatcttcc actgatgact tccaaagaag aaaatacaag aaaacatcac 1380
atttcttctt agtgtactag ttccttagag gacacatgcc aatataagac tgcgggccac 1440
cagccagttg attgaccaaa tatctcggtg atgtggcctc accaagtagc ataaagtttg 1500
ccactgtcac actagctatc tgtcccttat tggcaggaca caccctgctt tctttttttct 1560
caacacagcc cagtgactaa gcccattgca aacccagatg gagtagttga cctaagcttt 1620
gtaccacctg ctcaggtctt caagtagtag ttaagccttg gtccctgaaa tctagattgc 1680
tcagtgagac caaatgggga ggtcaactgc aggaatcagc tgatctcaca ggagtcacga 1740
acccacatca cccccaaacc cttccaggaa tggtctcttc accaggccct tccactctct 1800
ccctttttact cagacaaatc tattgaatgt ctaagtagtt atcactctcc acatacatgc 1860
tccaaaataa gacagaccca attaaagtcc atagagaagg ccaatgggat caaaggtaaa 1920
tactcagggg aaatgagtag tctcagccca ccagtctcag acatcctgag ttctgcacca 1980
tgacacagtc ttcttcttga gtggggctct gacacccaca gccaaattca caactaacat 2040
gggtgttctc caactttgtg gaagaagagt ccccaggtta gcatcttctc agtgatgaca 2100
tgtgttggac tctagtgagc ttgcctcttg ttaagaggat ggttttcatt tgcttcaggg 2160
gtatacctgc cagtcagtca gccacattcc cactcatgct cagaccaaca atcatggtta 2220
aactctgtgg gacacacaca cacacacaca cacacacaca cacacacaca cacgacatat 2280
aatcaggaga gggactcatt agagcctgta ggtcaggcag tggtagcaca tgcctttaat 2340
ctcaacactc aggaggcaga ggcaggtgga tttctgagtt ctaggtcagt ctgctttaca 2400
gagtgagttc taggactaca cagagaaatc caaaaaaaca aggctacaca gagaaaccat 2460

gtcctggggt aaaaaagaaa aagaaaa 2487

<210> 24

<211> 221

<212> PRT

<213> mouse

<400> 24

Met Trp Gln Phe Ser Ala Leu Leu Leu Phe Phe Leu Pro Gly Cys Cys
1 5 10 15

Thr Ala Gln Asp Ser Val Thr Gly Pro Glu Glu Val Ser Gly Gln Glu
20 25 30

Gln Gly Ser Leu Thr Val Gln Cys Arg Tyr Ser Ser Tyr Trp Lys Gly
35 40 45

Tyr Lys Lys Tyr Trp Cys Arg Gly Val Pro Gln Arg Ser Cys Asp Ile
50 55 60

Leu Val Glu Thr Asp Lys Ser Glu Gln Leu Val Lys Lys Asn Arg Val
65 70 75 80

Ser Ile Arg Asp Asn Gln Arg Asp Phe Ile Phe Thr Val Thr Met Glu
85 90 95

Asp Leu Arg Met Ser Asp Ala Gly Ile Tyr Trp Cys Gly Ile Thr Lys
100 105 110

Gly Gly Pro Asp Pro Met Phe Lys Val Asn Val Asn Ile Asp Gln Ala
115 120 125

Pro Lys Ser Ser Met Met Thr Thr Thr Ala Thr Val Leu Lys Ser Ile
130 135 140

Gln Pro Ser Ala Glu Asn Thr Gly Lys Glu Gln Val Thr Gln Ser Lys
145 150 155 160

Glu Val Thr Gln Ser Arg Pro His Thr Arg Ser Leu Leu Ser Ser Ile
165 170 175

Tyr Phe Leu Leu Met Val Phe Val Glu Leu Pro Leu Leu Leu Ser Met
180 185 190

Leu Ser Ala Val Leu Trp Val Thr Arg Pro Gln Arg Cys Phe Gly Arg
195 200 205

Gly Glu Asn Asp Leu Val Lys Thr His Ser Pro Val Ala
210 215 220

<210> 25

<211> 1307

<212> DNA

<213> mouse

<400> 25
cgggaagtgg ctaaaggagg aagtgccgag tgagagtgag ggaaaccaca ggaccaggag 60

acgcaggagt ggagcatgta gcctgttctc gctggcaggc tccaccaagg tgacccggtg 120

tgagaagatg catttgtcat tgctggtccc ctttctcttc tggatcacag gctgctgcac 180

ggctgaggat ccagtcacag gtccagagga ggtgagcggt caggagcagg gctccttgac 240

agtgcagtgc cgatatacct caggctggaa ggattacaag aagtactggt gccaaggagt 300

tcctcagaga tcatgtaaga ctcttgttga aaccgatgca tcagagcagc tggtgaagaa 360

gaaccgtgtg tccatcaggg acaaccagag agacttcatc ttcacagtga ccatggagga 420

tctgaggatg agcgatgctg gcatttactg gtgtggaatt acgaaagtgc caaccatgcc 480

ccccatcacc tccaccacca ccatcttcac agtgacaacc acagtaaaag agaccagcat 540

gtttccaacg ctgactagct actactctga taacgggcat ggcggtggtg acagtggcgg 600

tggtgaagat ggcgtcggtg atgggtttct ggatctcagt gtgctcctcc cagtcatctc 660

tgcagtcctg ttgcttctcc tgttggtggc ctcgctcttt gcttggagga tggtgaggag 720

acagaagaaa gacctgtccc tgaagcagcc cagaacctcc cctggctcct cttggaaaaa 780

gggctcctcc atgtcctcct ctggcaagga ccaccaagag gaagtggaat atgtcaccat 840

ggctcccttt cccagggagg aggtttcata tgccgctctg actttggccg gcttgggtca 900

ggagcctact tatggcaata ctggctgccc catcacccat gttcccagga caggccttga 960

agaggagacc acagagtaca gcagcatcag gaggcccttg cctgcagcca tgccttaatc 1020

ttggtctctg aaggcggctt ggagcatgga tctttacatc tgcctctgta cctgcttcct 1080

tacccggccc agctggtgac tggaactctg tccatccgtc tctcatggcc atcagctcta 1140

ccttgcttga gcttggagtt caacctcagg gggttccagg gaattaaggc tccttccaca 1200

tccccactta tagccaatgt accttggaag gtaccaggca ggctgcttca gggatgctgt 1260

gtaaatcgta tcaacgatga caataatagc aatcaacctt tatttat 1307

<210> 26

<211> 296

<212> PRT

<213> mouse

<400> 26

Met His Leu Ser Leu Leu Val Pro Phe Leu Phe Trp Ile Thr Gly Cys
1 5 10 15

Cys Thr Ala Glu Asp Pro Val Thr Gly Pro Glu Glu Val Ser Gly Gln
20 25 30

Glu Gln Gly Ser Leu Thr Val Gln Cys Arg Tyr Thr Ser Gly Trp Lys
35 40 45

Asp Tyr Lys Lys Tyr Trp Cys Gln Gly Val Pro Gln Arg Ser Cys Lys
50 55 60

Thr Leu Val Glu Thr Asp Ala Ser Glu Gln Leu Val Lys Lys Asn Arg
65 70 75 80

Val Ser Ile Arg Asp Asn Gln Arg Asp Phe Ile Phe Thr Val Thr Met
85 90 95

Glu Asp Leu Arg Met Ser Asp Ala Gly Ile Tyr Trp Cys Gly Ile Thr
100 105 110

Lys Val Pro Thr Met Pro Pro Ile Thr Ser Thr Thr Thr Ile Phe Thr
115 120 125

Val Thr Thr Thr Val Lys Glu Thr Ser Met Phe Pro Thr Leu Thr Ser
130 135 140

Tyr Tyr Ser Asp Asn Gly His Gly Gly Gly Asp Ser Gly Gly Gly Glu
145 150 155 160

Asp Gly Val Gly Asp Gly Phe Leu Asp Leu Ser Val Leu Leu Pro Val
165 170 175

Ile Ser Ala Val Leu Leu Leu Leu Leu Leu Val Ala Ser Leu Phe Ala
180 185 190

Trp Arg Met Val Arg Arg Gln Lys Lys Asp Leu Ser Leu Lys Gln Pro
195 200 205

Arg Thr Ser Pro Gly Ser Ser Trp Lys Lys Gly Ser Ser Met Ser Ser
210 215 220

Ser Gly Lys Asp His Gln Glu Glu Val Glu Tyr Val Thr Met Ala Pro
225 230 235 240

Phe Pro Arg Glu Glu Val Ser Tyr Ala Ala Leu Thr Leu Ala Gly Leu
245 250 255

Gly Gln Glu Pro Thr Tyr Gly Asn Thr Gly Cys Pro Ile Thr His Val
260 265 270

Pro Arg Thr Gly Leu Glu Glu Glu Thr Thr Glu Tyr Ser Ser Ile Arg
275 280 285

Arg Pro Leu Pro Ala Ala Met Pro
290 295

<210> 27

<211> 114

<212> PRT

<213> mouse

<400> 27

Gly Cys Cys Thr Ala Gln Asp Pro Val Thr Gly Pro Glu Glu Val Ser
1 5 10 15

Gly Gln Glu Gln Gly Ser Leu Thr Val Gln Cys Arg Tyr Asp Ser Gly
20 25 30

Trp Lys Asp Tyr Lys Lys Tyr Trp Cys Arg Gly Ala Tyr Trp Lys Ser
35 40 45

Cys Glu Ile Leu Val Glu Thr Asp Ala Ser Glu Gln Leu Val Lys Glu
50 55 60

Asn Arg Val Ser Ile Arg Asp Asp Gln Thr Asp Phe Ile Phe Thr Val
65 70 75 80

Thr Met Glu Asp Leu Arg Met Ser Asp Ala Asp Ile Tyr Trp Cys Gly
85 90 95

Ile Thr Lys Ala Gly Thr Asp Pro Met Phe Lys Val Asn Val Asn Ile
100 105 110

Asp Pro

<210> 28

<211> 295

<212> PRT

<213> homosapiens

<400> 28

Met Pro Leu Leu Thr Leu Tyr Leu Leu Leu Phe Trp Leu Ser Gly Tyr
1 5 10 15

Ser Ile Val Thr Gln Ile Thr Gly Pro Thr Thr Val Asn Gly Leu Glu
20 25 30

```
Arg Gly Ser Leu Thr Val Gln Cys Val Tyr Arg Ser Gly Trp Glu Thr
        35                  40                  45

Tyr Leu Lys Trp Trp Cys Arg Gly Ala Ile Trp Arg Asp Cys Lys Ile
    50                  55                  60

Leu Val Lys Thr Ser Gly Ser Glu Gln Glu Val Lys Arg Asp Arg Val
65                  70                  75                  80

Ser Ile Lys Asp Asn Gln Lys Asn Arg Thr Phe Thr Val Thr Met Glu
                85                  90                  95

Asp Leu Met Lys Thr Asp Ala Asp Thr Tyr Trp Cys Gly Ile Glu Lys
            100                 105                 110

Thr Gly Asn Asp Leu Gly Val Thr Val Gln Val Thr Ile Asp Pro Ala
        115                 120                 125

Pro Val Thr Gln Glu Glu Thr Ser Ser Ser Pro Thr Leu Thr Gly His
    130                 135                 140

His Leu Asp Asn Arg His Lys Leu Leu Lys Leu Ser Val Leu Leu Pro
145                 150                 155                 160

Leu Ile Phe Thr Ile Leu Leu Leu Leu Leu Val Ala Ala Ser Leu Leu
                165                 170                 175

Ala Trp Arg Met Met Lys Tyr Gln Gln Lys Gly Glu Arg Thr Trp Val
            180                 185                 190

Leu Gln Pro Leu Glu Gly Asp Leu Cys Tyr Ala Asp Leu Thr Leu Gln
        195                 200                 205

Leu Ala Gly Thr Ser Pro Gln Lys Ala Thr Thr Lys Leu Ser Ser Ala
    210                 215                 220

Gln Val Asp Gln Val Glu Val Glu Tyr Val Ala Ala Gly Met Ser Pro
225                 230                 235                 240

Glu Gln Thr Met Ala Ser Leu Pro Lys Glu Asp Ile Ser Tyr Ala Ser
                245                 250                 255
```

```
Leu Thr Leu Gly Ala Glu Asp Gln Glu Pro Thr Tyr Cys Asn Met Gly
            260                 265                 270

His Leu Ser Ser His Leu Pro Gly Arg Gly Pro Glu Glu Pro Thr Glu
        275                 280                 285

Tyr Ser Thr Ile Ser Arg Pro
    290                 295
```